

Claims

1. Water outlet box, in particular for the cylinder head of an internal combustion engine, comprising a regulating thermostat substantially consisting of a valve to block an opening of a passage emerging in said box, said valve being carried and centred by a portion of frontal spindle engaged in a bearing, which is integral with the box, stressed against its seat, formed by the peripheral edge of the above-mentioned opening, by an elastic loading means and moved away from said seat by a pressure means which reacts to heat, said means with opposed actions resting, directly or indirectly, on a stress-absorbing clamp which also ensures that said thermostat is mounted and positioned in cooperation with said bearing, characterised in that said box (1) is produced in a thermoplastic material and comprises, on the internal face of its constitutive wall (1'), at least two internal protrusions (10, 10') providing permanent support surfaces (10'') for the clamp (9) of said thermostat (2), before and after installation of said box (1).
2. Box according to claim 1, characterised in that the clamp (9) has a structure in the form of a small plate and comprises two opposed lateral legs (9') and that the protrusions (10 and 10') consist of two opposed internal radial projections of the wall (1') of the water box (1) formed in one piece with the wall.
3. Box according to claim 2, characterised in that the two opposed radial projections (10 and 10') are formed by localised thickenings of the wall (1') of the box (1) having, in the direction of the bearing (6) receiving the portion of spindle (5) integral with the valve (3), support surfaces (10'') situated in a plane which is perpendicular to the longitudinal axis (X) of the thermostat (2), the portions (11) of the internal face of the wall (1') adjoining said support surfaces (10'') of the projections (10, 10') constituting the centring surfaces, coaxial to the internal surface of said bearing (6) and intended to cooperate with the ends of the legs (9') of the clamp (9) to retain the clamp laterally.

4. Box according to any one of claims 1 to 3, characterised in that it has a cylindrical structure with a circular section, of which the longitudinal axis merges with the axis (X) of the thermostat (2) in the mounted state, the internal protrusions (10, 10') extending, viewed in a plane perpendicular to the axis (X) of the box (1), along two restricted arcs of a circle and forming two diametrically opposed annular portions.
5. Box according to any one of claims 1 to 4, characterised in that it is made of PA66 containing glass fibres.
6. Box according to any one of claims 1 to 5, characterised in that it is formed of two complementary parts (12 and 12') assembled together by vibration welding at a joint face (P) perpendicular to the axis (X) of the thermostat (2) in the mounted state and situated beyond the internal protrusions (10, 10').
7. Box according to any one of claims 1 to 6, characterised in that the support surfaces (10'') comprise sites, recessed or protruding, for indexing or engaging the lateral legs (9') of the stress-absorbing clamp (9) of the thermostat (2), intended, if necessary, to engage in a complementary manner with the specific formation of said legs (9').

8. Manufacturing process for a water outlet box provided with an integral thermostat, according to any one of claims 1 to 7, characterised in that it consists in providing a first open box part (12), of substantially cylindrical shape and comprising an opening (4) forming a valve seat and at least two opposed internal protrusions (10, 10') provided with support surfaces (10'') directed towards said opening (4), then in providing and introducing a thermostat (2) in said first box part (12) in such a way that the portion of frontal spindle (5) adjacent to the valve (3) is engaged in the bearing (6), in then compressing the elastic means (7) and applying the valve (3) against its seat (4'') by pushing the stress-absorbing clamp (9) in the direction of the portion of frontal spindle (5) beyond the plane comprising the support surfaces (10'') of the protrusions (10, 10'), in turning said clamp (9) about the longitudinal axis (X) of the thermostat (2), while maintaining the pressure, until the lateral legs (9') of said clamp (9) are situated opposite said support surfaces (10''), in then releasing said pressure in such a way that said legs (9') come to rest against said surfaces (10'') and, possibly, engaging said legs (9') with said support surfaces (10'') and, finally, in providing a second part (12') of the water outlet box, complementary to the first part (12), and positively connecting it to the first part by vibration welding.